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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,823

01/25/2006

Hiroshi Kaneta

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EXAMINER

LI, JUN

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

11/16/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/565,823	<b>Applicant(s)</b> KANETA, HIROSHI	
	<b>Examiner</b> JUN LI	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 01/25/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: on page 17 lines 10-12, "C" seems represents current passing distance, it is need be addressed thereof. On page 22, line 25 "positive" appears to be "negative".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**1. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanjou (US2003/0215702) in view of Takeuchi (US6083645), Takeuchi (JP2003-208895) and Shimamura (US2003/0113621).**

Tanjou teaches a secondary cell module comprising a combination cell formed by the positive electrode terminal and/or the negative electrode terminal connected in series and/or in parallel with each other through a metal bus-bar and a casing which contains this combination cell (abstract, [0090]) to make a small-sized and light-weighted as well as thin-shaped secondary battery ([0010]). Tanjou further teaches the positive electrode (item 5a, Figure 1-4) formed by laminating positive electrode active material on both sides of positive current collector made of aluminum , negative electrode (item 5b, figure 1-4) formed by laminating negative electrode active material on both sides of the negative current collector , electrolytic solution (item 4a) contained

Art Unit: 1793

in flexible outer wrapper of envelop type (item 4c), separator (item 5c) laminating negative and positive electrode ([0090], claim 1, 2) wherein a laminated secondary battery is expected.

Regarding claim 1, Tanjou fails to expressly teach the output discharge capacity, active material size and thickness, ratio between active material width and lead terminal width.

Tanjou indicates that the secondary battery energy capacity, energy, power etc can be designed with probable battery cell numbers ([0036]).

Takeuchi'645 teaches a lithium secondary battery with output energy more than 350W/kg and a negative active material layer thickness of 10-200  $\mu\text{m}$  made from a negative active material with a particle size of 1-20  $\mu\text{m}$  (abstract, column 5 lines 19-20, 60-61, claim 1).

Takeuchi teaches using a positive active material with primary particle sizes of 1 $\mu\text{m}$  and aggregate size 13  $\mu\text{m}$  ([0023]) wherein an average particle size is from 1-13  $\mu\text{m}$  is expected. Takeuchi also teaches the positive active material layer thickness can be 40  $\mu\text{m}$  and negative active material layer can be 30  $\mu\text{m}$  ([0027]).

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt the output energy capacity and negative active material size, layer thickness as shown by Takeuchi'645 and positive active material particle size and layer thickness as shown by Takeuchi to improve the secondary battery of Tanjou. One of ordinary skill in the art would have been motivated to do so because higher output energy capacity is always desired for intended uses such as in electric cars while

Art Unit: 1793

manipulating active material, layer thickness can help obtain a desired discharge capacity and a better internal resistance battery as indicated by Takeuchi<sup>645</sup> (abstract, column 5 lines 19-20, 60-61, claim 1) and Takeuchi (abstract). It is to be noted that the recited output energy capacity and particle size, layer thickness overlap with the prior art, thus a prima facie case of obviousness exists (See § MPEP 2144.05 [R-5] I). Furthermore, adopting known techniques for improving efficiency of similar product is well within the scope of one ordinary skill in the art.

Shimamura teaches the width ratio of the current collector and lead terminal can be 1 (abstract, Figure 1, [0053]) and the positive current collector thickness can be 20  $\mu\text{m}$  and negative current collector can be 10  $\mu\text{m}$  (example 1).

It is to be noted that the width of the current collector is the width of the active material region in light of the instant specification (page 17 first 5 lines and Figure 2). Tanjou also further teaches the width of the terminal to certain extent is desired for intended uses in electric automobile ([0093]).

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt the ratio between the current collector (i.e. active material) and lead terminal as shown by Shimamura to improve the secondary battery of Tanjou. One of ordinary skill in the art would have been motivated to do so because a large width lead terminal with a ratio (relative to the active material region) larger than the recited range is well known and desired for intended use in electric automobiles in the art and adopting known technique for improving efficiency of similar product is well within the scope of one ordinary skill in the art.

Art Unit: 1793

It would have been obvious to one of ordinary skill in the art to adopt recited current collector thickness as shown by Shimamura to improve the secondary battery of Tanjou because combining known elements for predictable results is well within the scope of one ordinary skill in the art. It is noted that Takeuchi already teaches the positive active material layer thickness can be 40  $\mu\text{m}$  and negative active material layer can be 30  $\mu\text{m}$  ([0027]) and Shimamura already teaches the positive current collector thickness can be 20  $\mu\text{m}$  and negative current collector can be 10  $\mu\text{m}$  (example 1) wherein the thickness of the positive current collector is 20% more than the positive active material layer ( i.e. thickness of the positive electrode excluding the current collector) and the thickness of the negative current collector is 10% more than the negative active material layer ( i.e. thickness of the negative electrode excluding the current collector). Thus the recited thickness of the current collectors and the thickness of the electrode are well known in the art and one of ordinary skill in the art would have been obvious to combine such known elements for predictable results.

Regarding claim 2-3 and 6, Tanjou further teaches positive terminal (item 8a figure4) and negative terminal are draw out facing each other (figure 4, [0095]). Tanjou teaches the surface area of bus-bar is more than 1.5 time bigger than the surface area of terminal ([0096], [0097]) wherein the terminal are exposed outside the case (Figure 10).

Regarding claim 4 and 7-9, Tanjou already teaches a case containing a plurality of secondary lithium ion battery cell combination (abstract, claim 1, 2, [0005], [0010]).

Art Unit: 1793

Regarding claim 5 and 10-12, Tanjou fails to expressly teach cooling the positive and negative electrode terminal.

Shimamura further teaches using a cooling wind sent to the terminal electrode portions (figure 3A, B, [0038], [0037]) for improving the lifetime of the battery.

It would have been obvious to one of ordinary skill in the art at the time of invention filed to adopt cooling wind sent to electrode terminals as shown by Shimamura to improve the secondary battery of Tanjou. One of ordinary skill in the art would have been motivated to do so because applying a cooling wind can help control the temperature increase of the battery thus improve the battery lifetime as indicated by Shimamura ([0037]) and adopting known technique for improving efficiency of similar product is well within the scope of one ordinary skill in the art.

### ***Terminal Disclaimer***

The terminal disclaimer filed on 09/08/2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 7029789 (previous copending Application No. 10/352134) has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Response to Arguments***

Applicant's responses filed on 09/08/2009 have been acknowledged. Previous objection to the abstract and 112 rejections have been withdrawn due to applicant's amendment and arguments.

Art Unit: 1793

Applicant's arguments have been fully considered but they are not persuasive. In response to applicant's arguments about there is no reason for one ordinary skill in the art to combine the teaching of the cited references, it is noted that applied references teach all the recited limitations and motivation/reasoning for combining them which have been clearly stated as set forth in the office action. Furthermore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicants provide no evidence why these applied references are not combinable. As for the cylindrical shape of secondary battery disclosed by some of the secondary references, it is noted that primary reference Tanjou already teaches a laminated type secondary battery while secondary references are applied for remedying the active particle size, active material layer thickness etc.

As for the alleged superior results, applicant is reminded that the comparative examples not read onto the applied prior arts. It is also noted that the claimed active material results is much broader than the data listed in the supporting example.

### ***Conclusion***

All the claims are rejected for the reasons of record.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



Art Unit: 1793

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUN LI whose telephone number is (571)270-5858. The examiner can normally be reached on Monday-Friday, 8:00am-5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUN LI/  
Examiner, Art Unit 1793  
10/30/2009

/Melvin Curtis Mayes/  
Supervisory Patent Examiner, Art Unit 1793